U.S. Army Research Institute
for the Behavioral and Social Sciences

Research Report 1551

A Comparative Overview of OPFOR and FFOR Decision Cycles for Battlefield Deception Planning

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This report reviews available open-source literature on U.S. Army and Soviet style tactical operations. Findings have been synthesized to provide battlefield deception planners with an overview of decision cycles and information flow processes used by these respective military organizations. The report includes a section comparing differences between U.S. operations planning and Soviet troop control at the tactical level from an information processing perspective. Implications for use of this type of knowledge for battlefield deception planning are suggested.

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FOREWORD

The U.S. Army Research Institute for the Behavioral and Social Sciences at Fort Huachuca assists the U.S. Army Intelligence Center and School (USAICS) in their proponency for battlefield deception, which includes training of tactical deception planners, development of new doctrinal concepts for deception, and decisions regarding the use of deception material.

A 3-year effort undertaken by ARI at Fort Huachuca has involved the development of an analytical framework to organize the battlefield deception domain, derivation of critical data and knowledge bases for use in planning, and development of tools and techniques to enhance and ease the planning process.

This report documents work completed to explicate and compare friendly force (FFOR-U.S. Army) and Soviet (OPFOR) style decision cycles for use by the deception planner. This is an important preliminary structure needed to understand differences in philosophy and operations on the tactical battlefield and how the acknowledgment of these differences might be used to effect a successful deception strategy.

Other work in this program to assist doctrinal and training development for battlefield deception is in the form of ARI reports: a deception framework, pathfinding for vulnerability analysis, and enhanced deception planning methods. These reports are useful to the USAICS training and combat developers directing deception analysts and tacticians for field assignments.

Results from this analytical effort have been presented to Commander, USAICS, the academic department (Department Human Intelligence), as well as other service elements (Air Force, Navy) and the DoD Camouflage, Cover, and Deception working group.

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Technical Director

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A COMPARATIVE OVERVIEW OF OPFOR AND FFOR DECISION CYCLES FOR BATTLEFIELD DECEPTION PLANNING

EXECUTIVE SUMMARY

Requirement:

The U.S. Army's recent proactive position to incorporate battlefield deception plans as an integral part of the maneuver commander's options has bought the need to assist planners currently being trained at the U.S. Army Intelligence Center and School (USAICS) in all aspects of tactical deception. This requires an analytical planning process that must include an understanding of the OPFOR (Opposing Force) and FFOR (U.S. Army—Friendly Force) organizations, information flow processes, and decision cycles. This report provides background data preliminary to the development of decision cycle knowledge bases for use by the deception planner.

Procedure:

Available open-source literature on U.S. Army as well as Soviet style tactical operations was reviewed. The findings were synthesized and presented in separate discussion of the decision-making process for each ground force, followed by a section indicating important differences between each and a basis for comparing and analyzing the information processing characteristics of each, as well as the implications for deception.

Findings:

From the deception planner's perspective, the FFOR decision cycle is understood as a horizontal process of interactions between commander and staff within an echelon, with coordinating links to echelons above and below to ensure revised plans and estimates. The Soviet or OPFOR cycle functions in a more centrally managed, vertical system based on directions formulated and expedited by staff functional areas. In addition, the OPFOR troop control system uses a more scientific approach to achieving battlefield objectives by applying algorithmic reasoning methods to justify specific tactical plans.

Utilization of Findings:

The documentation of the FFOR and OPFOR decision cycles will be incorporated as a beginning primer by USAICS in order to assist battlefield deception planners in structuring this type of knowledge for their use in deception planning.

A COMPARATIVE OVERVIEW OF OPFOR AND FFOR DECISION CYCLES FOR BATTLEFIELD DECEPTION PLANNING

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A COMPARATIVE OVERVIEW OF OPFOR AND FFOR DECISION CYCLES FOR BATTLEFIELD DECEPTION PLANNING

INTRODUCTION

Recent US Army doctrine calls for the systematic integration of deception into battlefield operations at the Corps and Division levels. The deception process can be defined to have two major parts: (1) the analysis of the opposing force (OPFOR-Soviet style doctrine and tactics) organization to determine how deception goals could be achieved through the proper deception story; and (2) the utilization of friendly force (FFOR-US Forces) resources to convey that deception story to the OPFOR. A major premise is that the first of these two (analysis of the OPFOR) is essentially a problem of "getting into the enemy's head."

The US Army has long had the capability to affect the OPFOR's receipt of information. Jammers, decoys, feints, among other capabilities, can deny, distort, or misrepresent information for the OPFOR. However, this is not deception in itself; such techniques only affect the OPFOR's data. For there to be true deception, it is necessary to affect not just the OPFOR's data, but most importantly the OPFOR's decisions and subsequent actions based on that data. Viewed in this way, the analysis of OPFOR decision making to develop a viable deception story must begin with an understanding of the OPFOR organizational structure and information flow cycles. Since the Soviet Armed Forces decision cycle is radically different from the US Armed Forces, it is necessary to understand both, or else a deception planner will never be able to "get into the Soviet commander's head."

The objective of this report is to provide a descriptive overview and comparison of OPFOR and FFOR decision cycles by illustrating their operations and planning processes in a tactical setting. It is designed primarily for use by personnel within the battlefield deception cell responsible for planning and executing deception strategies for the maneuver commander. It also serves as initial input to future modelling efforts aimed at dynamic portrayal of the decision cycles, nodes, links, and information transmission characteristics.

US Army (FFOR) Command and Control and Decision Cycle

Decision making in the friendly force may be viewed as a horizontal exchange between commander and staff within an echelon, with inputs from higher and lower command and staff elements serving as management information and intelligence. The vertical flows of missions and intelligence downward, and combat information and mission and resource status reports upward provide needed command and

control data for each command and staff level. With this in mind, decision making in the friendly force will be examined in two perspectives: first, the horizontal exchanges showing how a given echelon makes its decisions; and second, how decision making information flows vertically between echelons.

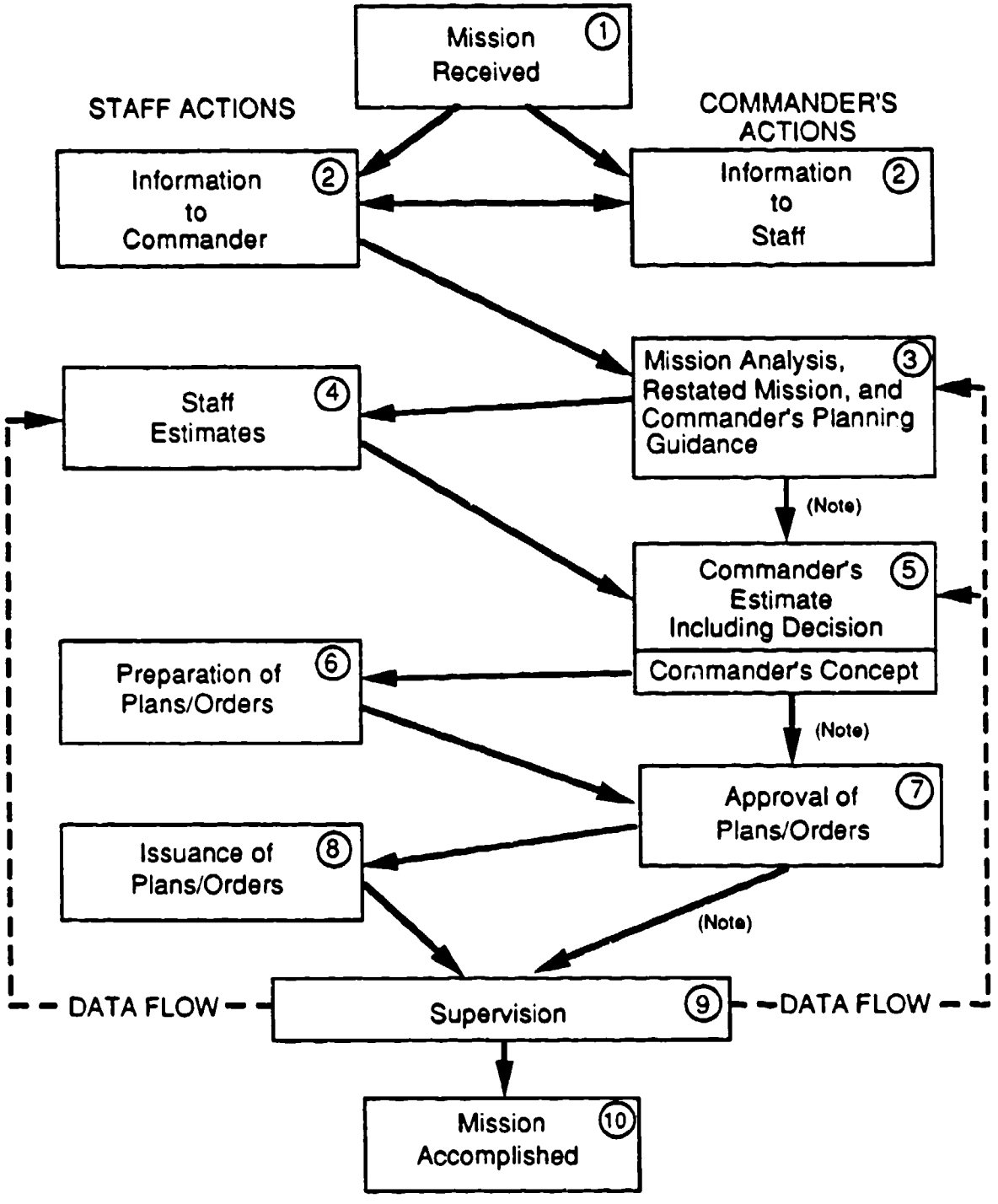
Decision-Making Process Within an Echelon

The FFOR decision cycle within an echelon is a horizontal interactive process between commander and staff sections, and begins with the receipt of a mission as laid out in FM 101-5, Staff Organization and Operations (US Army, 1984a). Figure 1 illustrates this "intra-echelon" decision making process. Once a mission is received (step 1), the commander and staff exchange information (step 2) about the METT-T factors that are relevant (mission, enemy, terrain, troops, time). As the third step, the commander then issues planning guidance and a restatement of the mission to the staff, selecting a course of action and outlining a concept of the operation. This staff implements step four by analyzing and preparing estimates of the situation and of potential courses of action based on the commander's mission restatement and planning guidance.

Once the commander receives the staff estimates and analyzes them (step 5), a more detailed course of action is decided and a firm concept for mission accomplishment is formulated and disseminated to staff and subordinates alike. The commander's concept formalizes the objectives which must be achieved and specifies the major constraints under which they must be achieved; he also specifies the assets available.

The coordinating staff prepare plans and orders for implementing the commander's concept in step six. At this critical step, all of the constraints must be examined in detail, and all of the various parts of the plans or orders must be deconflicted with each other and with the plans and orders of higher and lateral commands. Once an Operations Plan (OPLAN), an Operations Order (OPORD), an Administrative/Logistic Plan (Admin/Log PLAN), and an Administrative/Logistic Order (Admin/Log ORDER) have been formulated, they are presented for final review and approval by the commander. The commander receives the completed plans and orders and reviews them to assure that they will accomplish the commander's mission (step 7). The commander is responsible for taking the "broad look" before final approval of the plans and orders. The chief of staff and the assistant chief of staff for operations (G3) are responsible for recording and issuing the approved plans and orders (step 8).

The final step in the decision cycle is the supervision of the execution of the issued plans and orders (step 9). As the orders are executed by the subordinated units, the various control measures built into the plans and orders must be monitored. As thresholds for supplies remaining, phase lines, and other control



NOTE: In time-critical situations, the commander may be forced to complete his estimate based on his personal knowledge of the situation and issue oral orders to his subordinate units.

Figure 1. FFOR intra-echelon decision-making process.

measures are reached, decisions must be made about how to proceed in the execution of the orders. As unanticipated events happen, the existing plans and orders must be adjusted, or new plans and orders must be prepared and issued to accomplish the modified mission. New staff estimates may be fed back into the decision cycle. The commander reevaluates the initial analysis of the mission and issues modified planning guidance to the staff. Alternatively a reconsideration of the situation and a new concept may be discussed with the command group and staffs.

Interactions Between Echelons in Decision-Making

"Inter-echelon" decision making takes place in a very complex, rapidly changing environment. In this environment, each echelon depends upon its subordinates and superiors for critical assistance in accomplishing its mission. Modern Airland Battle doctrine requires inter-echelon decision making to provide rapid, coordinated and appropriate responses by the whole FFOR to this ever changing environment. The inter-echelon decision making process is based upon the hierarchical organization of the FFOR, as shown in Figure 2. (Figure 2 is our expansion of the single echelon Figure 1.) Each echelon receives a mission from its immediately-superior echelon. In order to accomplish this mission, the parent unit receives relevant information and intelligence about the battlefield situation from subordinate echelons. This data is filtered, analyzed, and consolidated by the staff. It is then brought to the attention of the commander. The commander uses this information about the situation to formulate the next response to the situation.

The principal interactions between echelons which impact the commander's decision making environment take three forms:

Form 1 — decisions cascading down the chain of command, with each echelon making plans in response to the mission assigned by their superior echelon.

Form 2 -- information and intelligence about the enemy flowing up through the echelons, so that higher echelon commanders are informed about what they need to know.

Form 3 — subordinate commanders informing their superiors about such status situations as: progress toward their objective, remaining resources, and intentions with respect to future actions.

In Form 1, decisions cascade down the chain of command because each commander must be given a mission before a plan can be created to accomplish that mission. There may not be time for the planning process to proceed serially through each step in the intra-echelon decision cycle discussed above. This decision cycle may have to be compressed, with several steps happening in reduced time and in parallel.

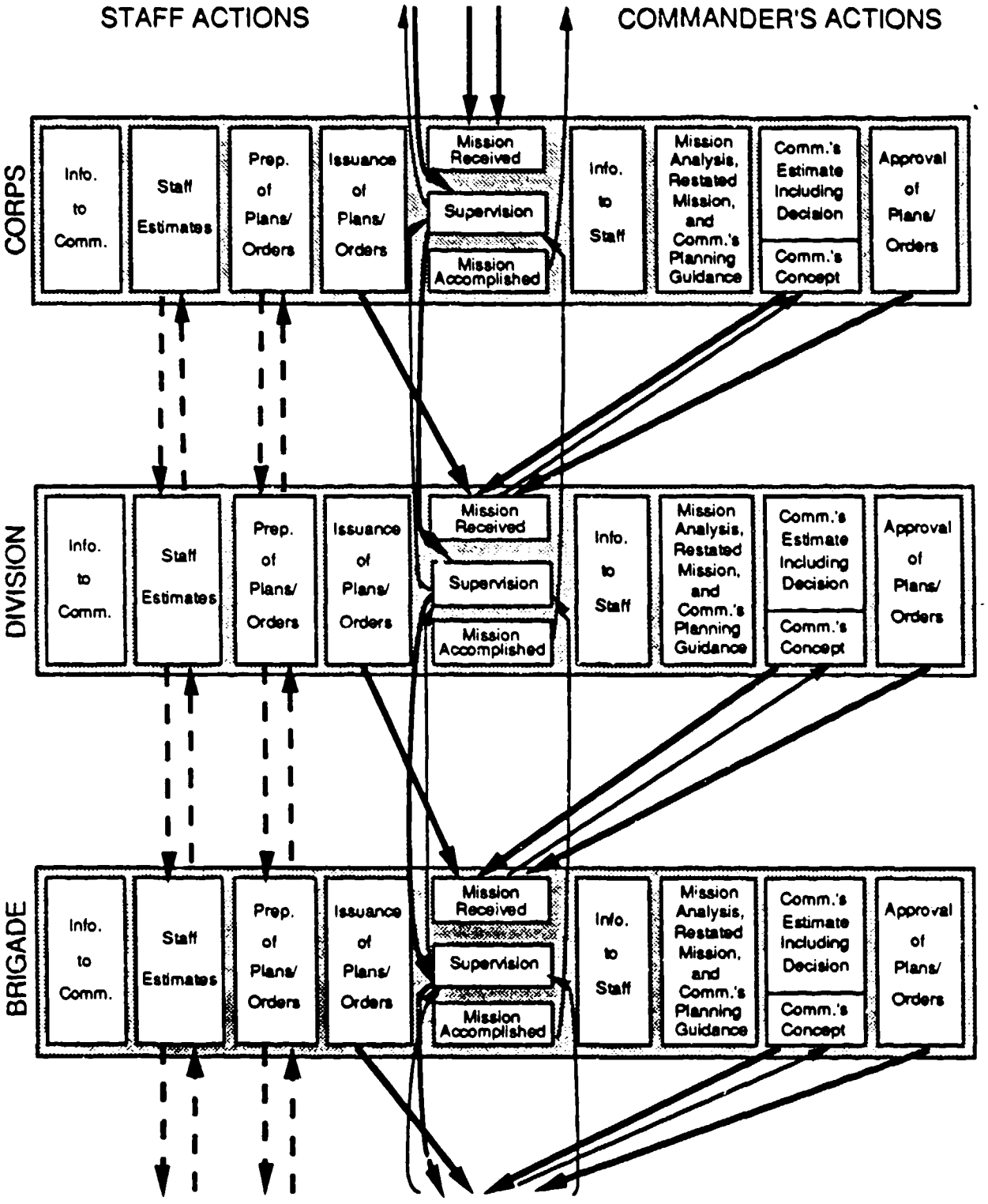


Figure 2. FFOR inter-echelon decision-making process.

Similarly, it is likely that there will arise times when preliminary estimates of higher echelon courses of action may have to be provided to lower echelon commanders. These early estimates of courses of action are required to enable lower echelons to plan in parallel and significantly shorten the overall response time of the FFOR.

Form 2 information and intelligence reports about the enemy flow up through the echelons. Higher echelons must have all relevant information and intelligence about the enemy pertinent to their level of command, which includes information from various lower echelon sources. This information, typically in raw form and in large volume, can be duplicative and of varying quality and credibility. As such, it requires a certain degree of filtration and consolidation before being passed up to the next higher echelon for critical analysis and integration/fusion with other source data. Timeliness and minimal effort by limited resources art the lower echelons are primary criteria in the handling and processing of the raw data. Finished intelligence, resulting from this whole process, is then passed upward, laterally, and downward to the key decision making elements involved in the planning and execution of assigned missions and their vital tasks.

Form 3 reports detailing friendly troops progress in their efforts to accomplish their mission are as valuable as Form 2 reports. Status reports are essential to the proper functioning of the friendly force; without knowledge of who's where and how much more they can be utilized, the friendly commander is lost in managing the battle and in accomplishing the mission. In addition to progress/status reports, the commander must determine his command's readiness status, who needs what, when and where they need it, and how it will impact on their ability to conduct the next battle.

Soviet Army (OPFOR) Troop-Control System and Decision Cycle

The OPFOR troop control system framework may be viewed as a distinctly structured, functionally oriented hierarchy. This means that missions and decisions flow primarily vertically (upward and downward) between functional elements of the military structure (commander to commander, chief of staff to chief of staff, etc.). Figure 3 (based generally on US Army 1984b, 1984c — The Soviet Army) illustrates that this system differs substantially from the horizontal command and staff interaction structure of the FFOR models. A critical distinction is that once a mission is determined at the highest levels, subordinate units are directed to execute various sub-missions under direction and control of their corresponding functional superior elements. These functional elements within each echelon are essentially executing a decision made by higher headquarters, with little flexibility in working a detailed, interactive plan intra-echelon.

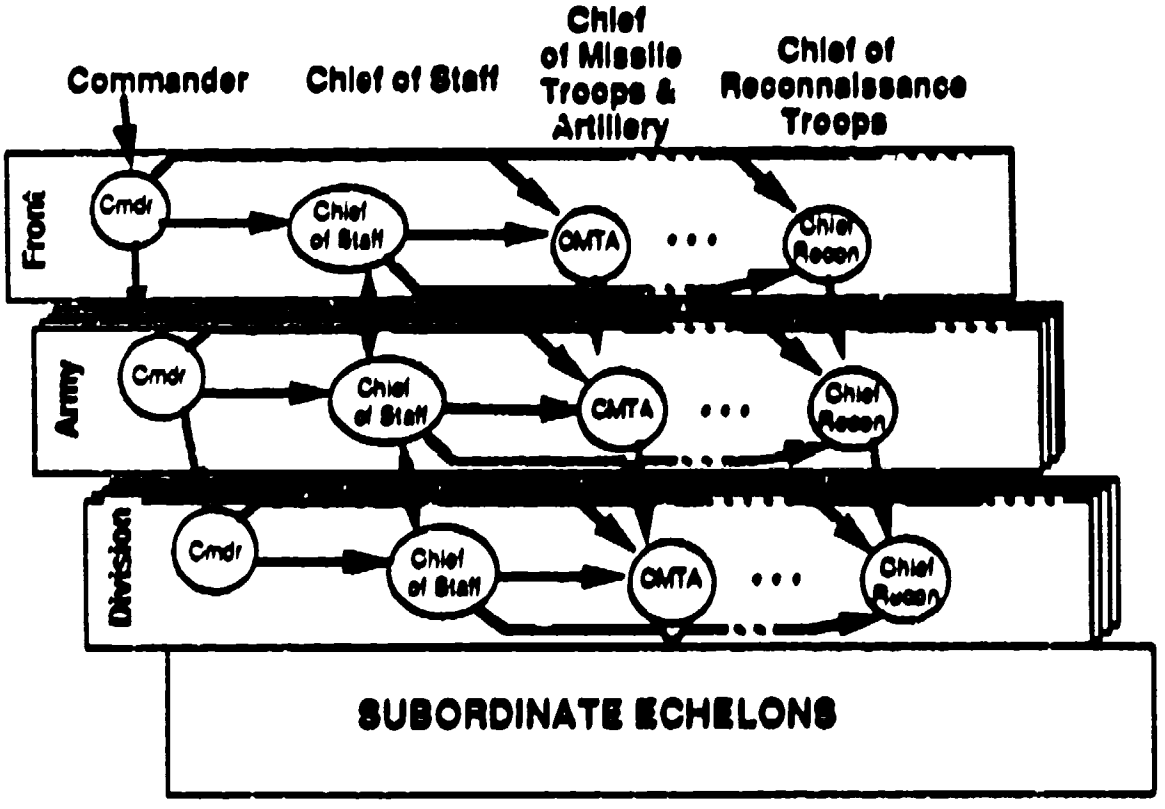


Figure 3. OPFOR troop-control system.

Inter-Echelon Troop-Control System

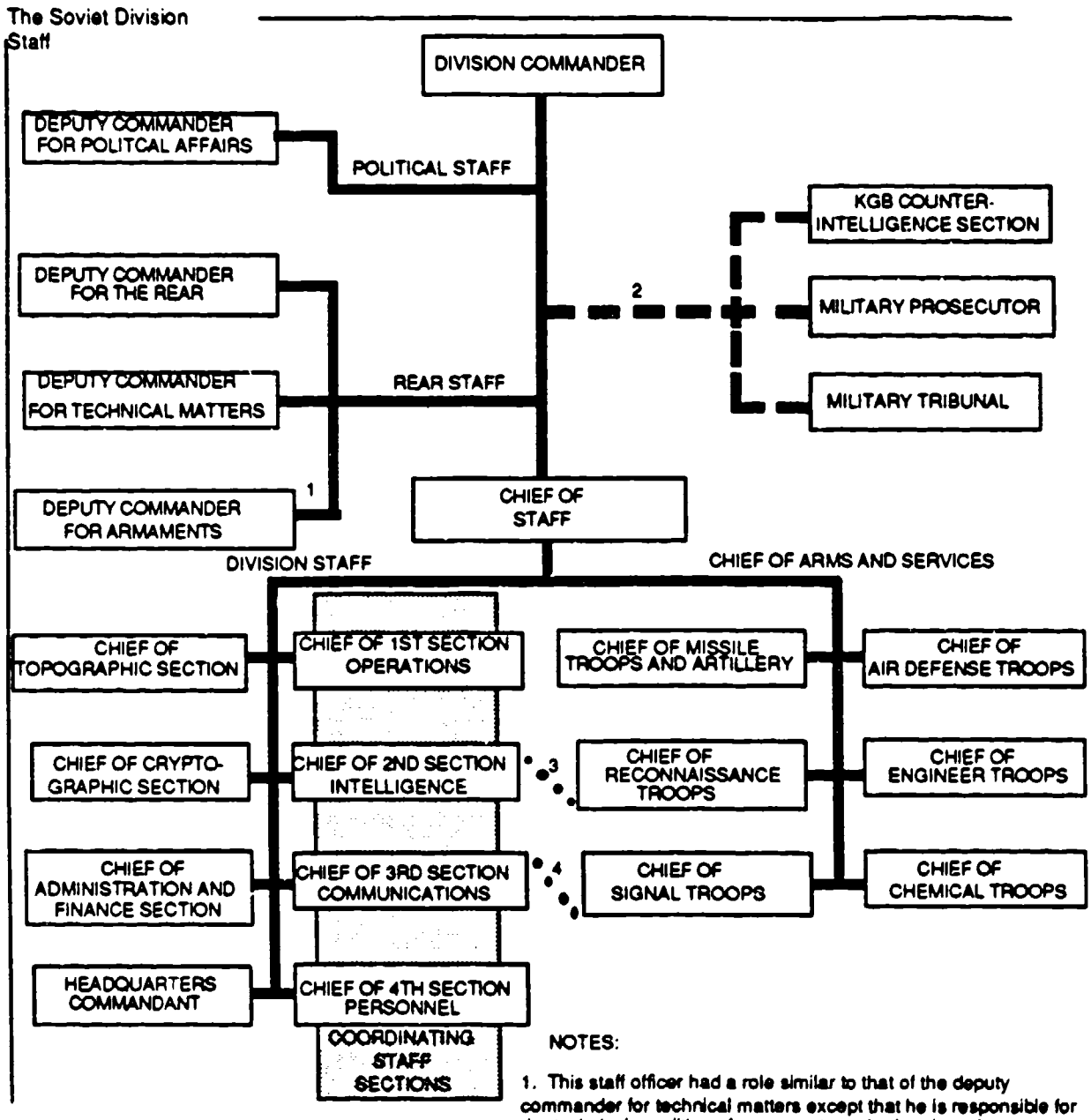
The Soviet command and control system (troop control) operates on the principles of one-man management and centralization. They are inseparably linked, but not identical. On the one hand, the one-man management principle holds the commander totally responsible for decision making and for fulfilling the assigned tactical mission of his unit. On the other hand, the principle dictating the centralization of control gives to the superior echelon the authority to unite the efforts of subordinate units under its command for the primary purpose of achieving the common combat goal based on a unified plan. Typically, the superior echelon assigns to its subordinates their specific missions and specifies the methods they will employ for carrying out these missions. The superior commander can likewise influence the course of battle by controlling any and all troops and equipment under his command.

The division commander receives direction primarily from the army commander and directs subordinate regiments through their commanders. However, the front commander can exercise "skip-echelon" control, bypassing the army level and commanding the division commander directly. The Army commander may likewise directly control the division's regiments. This principle of centralized, one-man management is inherent in the structure of the OPFOR decision cycle and troop control system.

Using the division as an example, this commander controls the staff elements within the echelon primarily through the chief of staff. As shown in Figure 4 (US Army, 1984c), the chief of staff is a major player. He coordinates and provides control for various staff members, including the chief of missile troops and artillery (CMTA) and the chief of reconnaissance troops. This control is balanced by that exerted by corresponding functional elements of superior echelons. In particular, the CMTA receives functional direction from the higher echelon's (army) CMTA. Likewise, the chief of reconnaissance troops, as well as other staff elements, receive functional direction from their higher echelon's corresponding functional elements. In similar fashion, the functional staff elements of both the superior army and subordinate regiment of commanders may be controlled functionally through their respective higher echelons (i.e., front and division). OPFOR higher echelons appear to have more direct, rapid, and precise control over individual echelon functional elements than the FFOR.

Intra-Unit Troop-Control System

OPFOR control within an echelon also differs from that of the FFOR. For example, Figure 4 shows the composition of a division headquarters staff organization and the key staff elements which interface



NOTES:

1. This staff officer had a role similar to that of the deputy commander for technical matters except that he is responsible for the technical condition of armaments and related combat equipment and instruments.

2. These three sections assist the division commander, but they are not subordinate to him.

3. The chief of the intelligence section is also the chief of the reconnaissance troops.

4. The chief of the communications section is also chief of signal troops.

Figure 4. OPFOR division headquarters staff operations.

directly with the division commander. The KGB counter-intelligence section, as well as the military prosecutor and tribunal, are shown as connected by broken lines. These elements are not staff subordinate to the commander. They nominally assist the commander while remaining subordinate to their own higher authorities.

The chief of staff plays a vital management role in all echelons from battalion upward and is second only to the commander. The commander may be the strategist-tactician, but the chief of staff is practically everything else, including the commander's right hand in all command and staff matters. This is the only officer authorized to issue orders in the name of the commander and must have all the qualifications the commander possesses. The chief of staff also controls those functions that are traditionally referred to as G-2 (intelligence) and G-3 (operations) in the US Army. Both leaders are the key nodes or centers of gravity within their respective organizations. The commander, however, must make all final decisions, reflecting the one-man management principle. OPFOR front, army, and division headquarters are organized basically along the same lines, differing primarily in size and complexity.

Automated Troop-Control and the Decision Cycle

The Soviet Army has instituted a significant theoretical and practical approach to troop control on the modern battlefield. Automated troop control consists of systematic steps taken by the staff within an echelon, in order to perform complex space-time analyses and correlation-of-forces computations. This is their way of executing the command decisions that have been handed down from each functional element. This process is described as concept-algorithm-decision (Druzhinin, 1972):

- Concept deals with the commander's understanding of the assigned mission and the plan for executing it;
- Algorithm is a systematic decision making procedure which generates a series of options (course of action) for accomplishing the mission, based on objective data and experience;
- Decision is the commander's choice of the single best option from among the alternatives provided for consideration.

The "decision" is considered by the OPFOR to be the basis for planning (Savelyev et al, 1977). Figure 5 illustrates the OPFOR concerns in making a decision. In addition to defining the objective of the combat operations, the decision outlines the forces, resources, procedures, and timeliness for accomplishing it. The critical requirement placed on the decision is that it be "scientifically sound" (Cimbala, 1986; Savelyev et al, 1977). Mathematical methods of operations research and PERT-like planning procedures are among the tools used for this scientific substantiation.

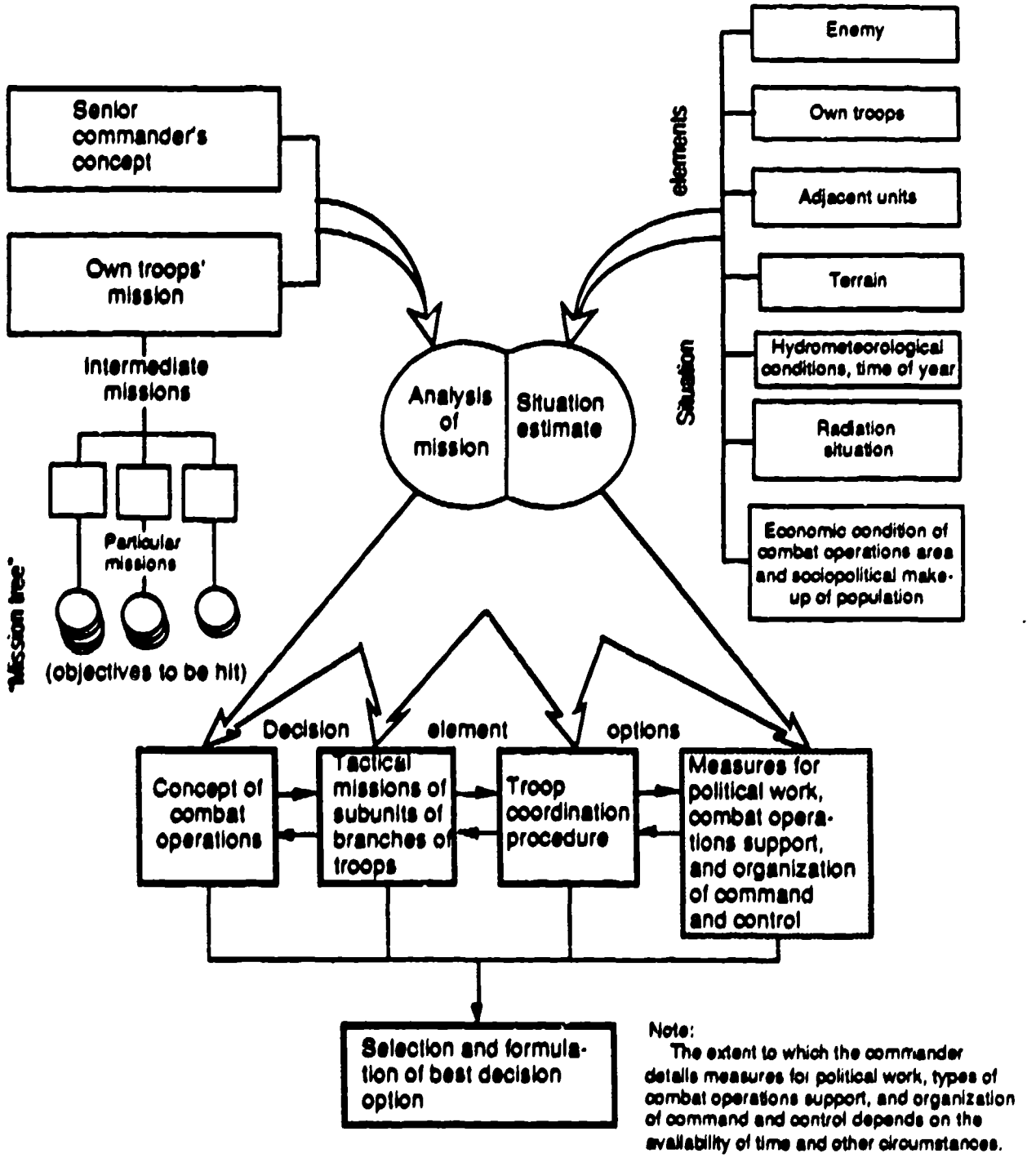


Figure 5. The OPFOR commander's decision-making methodology.

The OPFOR decision cycle has surface similarities to that of the US Army, but has a unique ideological approach to its armed force's mission. This approach includes both politically developed doctrine and use of scientifically constructed algorithms for planning and executing the decision for the particular battlefield operation commanded.

Network diagrams similar to PERT charts assist in the determination of the most efficient and effective way of allocating tasks throughout the organization and in planning combat operations. This means compiling important factors such as who is to do what, and how long it will take to do it. Once completed, these factors are then used to develop a timetable diagram, including:

- The scale of the combat operations;
- The most advisable sequence of actions;
- The best distribution of duties among responsible personnel;
- Time reserves and means of reducing the time consumed for organizing and planning combat operations.

Table 1 (Savelyev et al, 1977) shows an example of a typical OPFOR planning operation by a commander and his staff for a control operation to organize an offensive, and the times generally allocated for the various associated activities. The operation codes column contains numbers corresponding to a network chart which might be developed to manage the plan. By examining this listing, it can be seen that the time factor effectively drives the command and control functions and related tasks and activities. Time is, of course, crucially important for both FFOR and OPFOR operations.

The OPFOR decision cycle is heavily reliant on the commander and staff in its initial phases. On receipt of the operational or tactical mission from a higher echelon, the commander immediately directs his staff to respond. One of the first steps in the decision making process is the determination of key situation elements (see upper right blocks of Figure 5). Figure 6 (Savelyev et al, 1977) illustrates the intelligence/reconnaissance function in its role as provider of information and intelligence for determining many of these situation elements. This function normally provides continuous data in order to maintain an accurate representation of the battlefield situation. The collection assets, however, are directed at specifically assigned mission targets once a mission order is received and its objectives are known. The figure also shows the multiple sources from which essential information about the battlefield situation may be collected by the OPFOR.

Table 1. Typical OPFOR work-operations by commander and control organs: basis for network/pert chart.

Name of operation (in general terms)	Executive agents	Operation code	Duration of operation in minutes
1	2	3	4
Analysis of assigned mission by the commander and the chief of staff	Commander and chief of staff	1,2	20
Plotting the mission on the second working map	Staff officer	1,3	18
Study and estimate the enemy	Staff officer	1,3	20
Calculation of time for organizing combat operations (while analyzing the mission)	Chief of staff	2,4	7
Giving instructions for preparing data and calculations required to make the decision and for taking measures to prepare the troops for the forthcoming combat operations	Commander	2,5	10
Issuing warning order to reconnaissance subunit	Staff officer	5,6	5
Issuing warning order to combined arms subunits	Staff officer	5,7	12
Issuing warning order to the special troop subunit	Service chief	5,8	5
Estimate of enemy	Commander and chief of staff	5,10	20
Report to commander of data and calculations on the enemy	Staff officer	6,9	10
Analysis of assigned mission	Service chief	8,14	10
Developing the calculation of the correlation of forces	Staff officer	7,13	20
Participation in developing the calculation of the correlation of forces	Staff officer	9,11	10
Assigning mission to reconnaissance subunit	Staff officer	11,17	18

Table 1. (Continued)

Name of operation (in general terms)	Executive agents	Operation code	Duration of operation in minutes
1	2	3	4
Preparing data and calculations on employment (use) of the special troops subunit	Service chief	14,15	32
Estimate of friendly troops	Commander, chief of staff	10,12	25
Devleoping the calculation of the time for advancing troops to the assualt position line	Chief of staff	10,16	12
Estimate of the situation and 'drawing up the decision	Staff officer	16,20	28
Planning of reconnaissance	Staff officer	17,19	30
Planning of camouflage and commandant's service measures	Staff officer	13,18	25
Developing the plan for monitoring and rendering aid	Staff officer	19,24	18
Developing planning documents on employment of special troops subunits	Service officer	15,23	30
Estimate of the radiation situation and the terrain	Commander and chief of staff	12,20	15
Developing fragmentary orders	Staff officer	18,22	20
Commander listens to the chief of staff's proposals regarding the decision	Chief of staff	20,21	5
Assignment of missions to subunit commanders, giving instructions for coordination, for comprehensive support of combat operations, and for party-political work	Commander	20,24	55
Checking and signing the planning documents	Commander and chief of staff	24,25	15

Table 1. (Continued)

Name of operation (in general terms)	Executive agents	Operation code	Duration of operation in minutes
1	2	3	4
Amplification and final development of fragmentary orders and visual reconnaissance plan	Staff Officer	22,25	50
Commander's participation in assignment of missions, and procedures for thier performance by the subunit	Staff officers, service cheif	23,25	40
Amplification of the missions for the reconnaissance subunit and the procedure for carrying them out	Staff Officer	24,25	20
Performance of visual reconnaissance in order to amplify the decision and the problems of coordination	Commander, chief of staff, service chief	25,26	75
Report to the senior commander on readiness for the attack	Commander	26,27	5

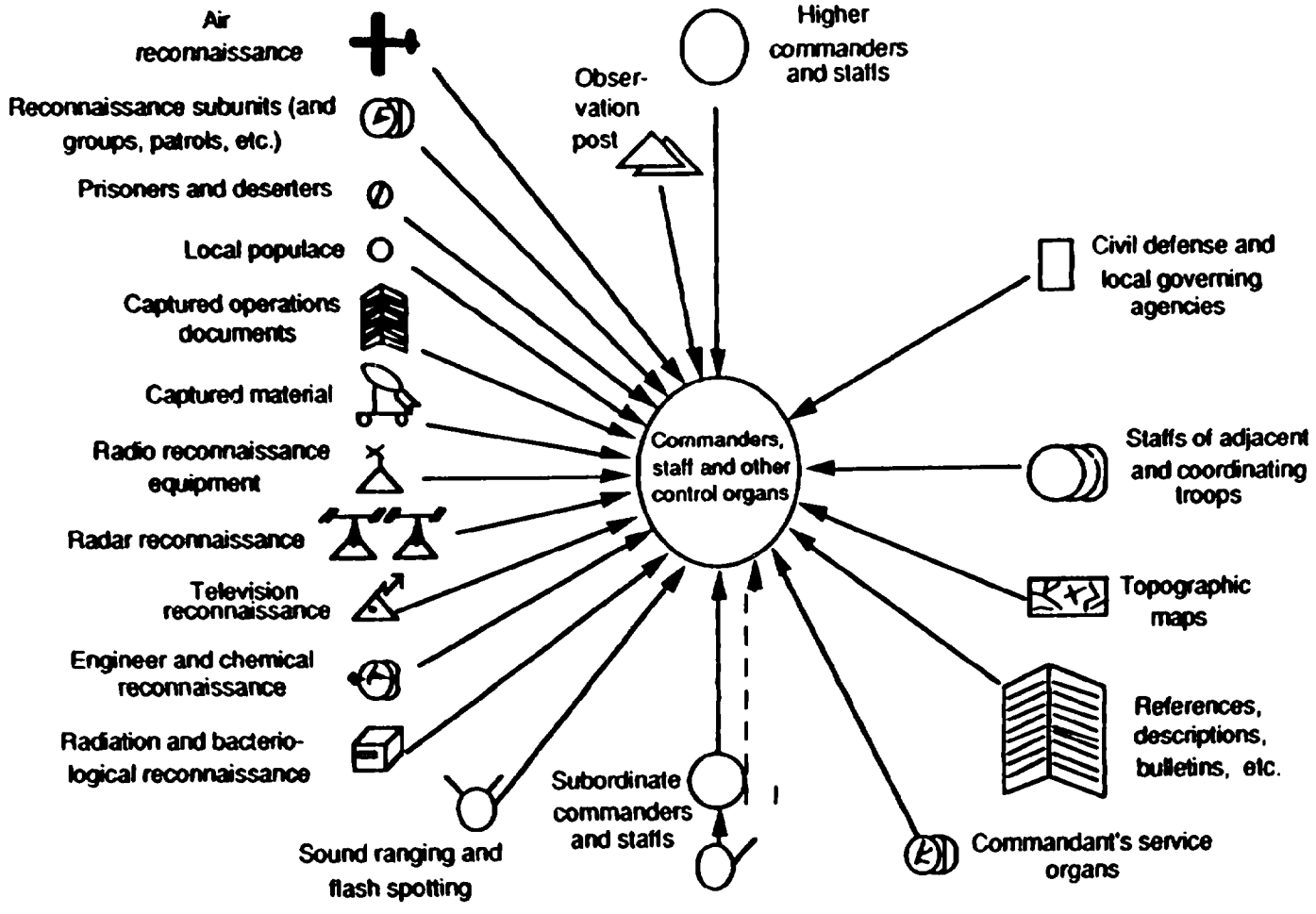


Figure 6. OPFOR commander and staff sources for obtaining situation data in combat

The many "eyes and ears"/sensors that provide the commander and staff with vast amounts of information — not just on the enemy, but on their own forces and combat environment — are absolutely vital to effective decision making on the battlefield. It is up to the analytical teams to reduce much of the raw data to meaningful intelligence information that will support the essential situation elements within the time frame established by the chief of staff. It is these analytical teams and their chiefs who individually and collectively must be "deceived" into believing that what they "see" on their sensor arrays, and hence tailor what they filter, process, and present to the commander, is the "true situation". The OPFOR commander and his control organs distribute the tactical missions to the troops and organize their combat units after adopting the decision and engaging in a ponderous combat planning process. In summary, the OPFOR recognizes several key principles of command and control: scientific approach, one-man/functional line management, and centralized vertical control.

Comparing Decision Cycles

Although the terminology used by the FFOR and OPFOR is often similar, there are significant differences in operating philosophies between the two. Organizationally, each has a commander and staff at each echelon in a hierarchical structure representing a chain of command. From here, the horizontal and vertical flow of information, although superficially similar by flowing among communications links throughout each chain, flows with different intentions and priorities. In the FFOR, each echelon operates somewhat independently in planning and managing an assigned mission. Commander and staff are highly interactive in executing and monitoring the operation. Vertical inputs from above and below serve to guide and modify the operation even while it is in progress, and to make allowance for needed coordination in the total effort.

The OPFOR operates with a more centralized, vertical focus from functional element to functional element, top to bottom. This means that interaction and flexibility occurs within an echelon, and more directives and responses flow vertically. This also means that horizontal coordination and mutual knowledge is often minimal after the commencement of the battle; this shortcoming is a peculiar facet of OPFOR that can be exploited by deception planners.

Each force organization may be considered according to eight key general information processing characteristics. These are listed in Table 2, along with some suggested implications for OPFOR vulnerability to deception based on these characteristics. Table 2 is our conceptualization based on expert opinion and the listed references. The far right column of the table suggests needed data in order to exploit these OPFOR weaknesses. Each information processing characteristic is briefly defined below.

Centralization is the extent to which tactical decisions are made at high levels and central locations. The Soviet system is more centralized than the FFOR, which means that a tactical OPFOR unit will have less autonomy and internal horizontal interplay than a corresponding FFOR unit.

Operational homogeneity is the degree of decision-making similarity and execution similarity among same size units throughout the force organization. This is high for OPFOR units and moderate for FFOR units; this is clearly a corollary of centralized control.

Algorithmic reliance refers to the use of scientific mathematical-type techniques to support tactical decisions, a characteristic central to both OPFOR and FFOR, but more pronounced in OPFOR.

Preplanning refers to the extent and degree of detail to which battle plans (including contingency plans) are formulated well in advance of the battle and adhered to during the execution of the event. Again, although planning is certainly an advanced military art, it is much more intricate, predictable, and slavish in the OPFOR.

The need for redundancy reflects the level of confidence a force places on any single source of information. Because FFOR has many sources, both human and otherwise, there is not generally a heavy reliance on any single source of data; FFOR analysts usually search for correlating sources of matching data elements. OPFOR, due to heavy reliance on vertical functional data flow as well as cultural preferences for human sources, tends to be less insistent on redundancy of data sources. It should be noted, however, that this distinction may fade out within the next decade as younger, more intellectually versatile analysts and commanders populate the force and more diverse technical sensors are available.

High-tech reliance is the extent of dependence on automated or computerized information processing. Although it is clear the FFOR is very high here, the OPFOR is less easily predictable. OPFOR does not possess and operate as many high-tech systems throughout its military as does FFOR, but a high degree of credibility is normally placed on the products of certain sophisticated reconnaissance assets.

Table 2. Information processing characteristics of OPFOR compared to FFOR, with implications for vulnerability to deception.

General Characteristic	OPFOR Extent (relative to FFOR)	Implications for Vulnerability	Needed Data/Knowledge
Centralization	High	limited decision-making at lower level	where are decisions of different sorts made?
Operational Homogeneity	High	standardization	who are the key decision makers?
Algorithmic Reliance	High	predictable and systematic sensitivity	which factors are included in the algorithms? what are effects?
Preplanning	High	reduced real-time decision-making; predictable sensitivity	what are the contingencies? how are they treated?
Need for Redundancy	Low	sensitivity depends on interactions between paths	what are the weightings and priorities of data channels?
Hi-tech Reliance	Low	hi-tech data channels not used; time delays	what electronic channels are available? how processed?
HUMINT Reliance	High	human cognitive biases relevant; time delays	what human sources are available? how processed?
Risk Preference	Low	hi-risk actions relatively insensitive	how is risk perceived in various actions?

HUMINT reliance refers to the value placed on, and the level of effort dedicated to, the gathering and processing of human intelligence sources. Traditionally short in the availability of electronic collection systems and traditionally bountiful in the supply of human operatives, OPFOR has developed an elaborate HUMINT system in the military that far exceeds FFOR capacity. Diminishing the effectiveness of this vast network, however, are factors of cultural distrust and of timeliness. When information does arrive in a punctual fashion from a very reliable source who is culturally "clean"; its credibility is judged to be excellent and is often decisive in the mind of the OPFOR analyst and his commander.

Finally, risk preference reflects the force's level of tolerance for uncertain information, plans, and actions. OPFOR is rigid in its dislike for risky ventures, which directly conflict with its centralized, scientific approach to war and the typically "eastern" mentality which will avoid a possible failure at any cost. Risk, in the OPFOR, has three factors: military (tactical), political, and personal, in increasing order of consideration.

SUMMARY AND CONCLUSION

This report presented a comparative overview of the FFOR and OPFOR decision-making cycles for battlefield deception planning. This overview revealed a major difference between the two forces regarding their internal information flow. It was found that FFOR information flows both vertically and horizontally between echelons, making it more interactive, while that of the OPFOR has a more centralized, vertical focus. As a result of this centralization, horizontal coordination and knowledge within an OPFOR echelon is often minimal and thus a factor that can be exploited by the FFOR. Aside from this centralization, there are other exploitable factors that should be taken into consideration when comparing FFOR and OPFOR decision cycles. These factors are: operational homogeneity; algorithmic reliance; preplanning; the need for redundancy; high-tech reliance; HUMINT reliance; and risk preference. An understanding of these factors, along with the organizational structures and decision making approaches taken by each force, is an important initial step in acquiring knowledge for application to a deception planning operation.

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